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*1972 Suggested  
Insecticide  
Guides***Insect Control for  
LIVESTOCK AND  
LIVESTOCK BARNs**

Livestock producers must follow a sound program of pest control if they are to attain maximum income for their farming investment. Flies, lice, mites, ticks, and grubs irritate animals and some of them suck their blood. This reduces meat, milk, and egg production. On occasion, individual animals actually have been killed by attacks of large numbers of pests like horse flies, lice, and mites. Several of these pests can transmit diseases such as anaplasmosis and pink-eye from animal to animal. Thus losses from these pests each year cost Illinois farmers millions of dollars. A livestock producer does not need to share his profits with these insects. They can be readily controlled and in many cases eradicated.

In the following charts only the safest, most effective insecticides are suggested for each specific insect on each type of livestock. Other insecticides that may have label approval for use on livestock are not included because they are less effective or more toxic or present potential residue problems. Blank spaces in the table of limitations (back cover) mean that we do not suggest the insecticide for that specific purpose in Illinois.

In using insecticides read the label carefully and follow all instructions. Do not exceed the rates suggested; observe the interval between application and slaughter and apply only to those animals for which use has been approved. Keep a record of the insecticide used, the trade name, the percentage of active ingredients, the dilution, rate of application, and dates of application. If you are ever questioned, you have the records.

Most of the insecticides are suggested for use as emulsion concentrates since these are the easiest formulations to handle. However, wettable powders can be substituted for emulsion concentrates providing the finished spray is agitated.

The chemical names used in these tables may be unfamiliar to you. These names are the common coined chemical names and as such are not capitalized. Trade names are capitalized. In the table of limitations (back

cover) the common names are listed first. Should the trade name be more commonly used, it is listed in parentheses with the common name. Throughout the tables of suggested insecticides on pages 2 and 3, however, only the common name is used where there is one. In case of question, refer to the table of limitations.

These suggestions are printed annually. Be sure you have the current year's issue. Labels may be cancelled and the product removed from the market at any time. New labels may be granted. We have attempted to anticipate any further label changes, but there still may be an occasional change. It is imperative that you check with your local county extension adviser if you are not sure about the insecticide you plan to use. We will make announcements of label changes through the news media in an attempt to keep you up to date.

Suggestions for use of insecticides, effective from a practical standpoint, are based on available data. Rainfall, temperature, and many other factors affect efficiency of insecticides. Report the details of control failures to us.

These suggestions were prepared by entomologists of the University of Illinois College of Agriculture and the Illinois Natural History Survey.

Fact sheets and Circular 925, *Insect Pests of Cattle*, describing the life history, biology, and habits of most of the insects mentioned, can be obtained from the offices of county extension advisers or by writing to Office of Publications, College of Agriculture, University of Illinois, Urbana, Illinois 61801. These fact sheets are indicated by an NHE number in the tables.

Other circulars on insect control are:

Circular 897 — Insect Control for Commercial Vegetable Crops and Greenhouse Vegetables;

Circular 899 — Insect Control for Field Crops;

Circular 900 — Insect Control by the Homeowner;

Circular 936 — Pest Control in Commercial Fruit Plantings.

These can be obtained from the same offices.

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN COLLEGE OF AGRICULTURE COOPERATIVE EXTENSION SERVICE  
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JOHN B. CLAAR, Director, Cooperative Extension Service, University of Illinois at Urbana-Champaign.

**DAIRY CATTLE, BEEF CATTLE, SWINE, AND SHEEP**  
(Refer to table of limitations on back page before using insecticides)

	Insect	Insecticide	Amount per 100 gal. water or as directed	How to apply
Dairy Cattle	Lice and mange (NHE-18)	crotoxyphos E.C., 1.1 lb. per gal.	6 pt.	1-2 gal. per animal. Spray entire animal to saturation. Make 2 treatments 14 days apart.
	Face flies <sup>4</sup> (NHE-106)	crotoxyphos E.C., 1.1 lb. per gal.	2 qt. per 3 gal. water	1-2 oz. per animal; 2-4 times per week. <sup>2</sup>
	Horn flies <sup>4</sup> (NHE-59)	crotoxyphos E.C., 1.1 lb. per gal.	7½ gal.	1-2 pt. per adult animal per week. <sup>2</sup>
	Stable flies <sup>5</sup> (NHE-61)	crotoxyphos 2.0% O.		1-2 oz. per animal; 2-4 times per week. <sup>2</sup>
	Horn flies <sup>4</sup> Stable flies <sup>5</sup>	dichlorvos 1.0% O. <sup>1</sup>		1-2 oz. per animal daily. <sup>2</sup>
		pyrethrin 0.1% + synergist O. <sup>1</sup>		
		pyrethrin 0.5% + synergist O. <sup>1</sup>		2 oz. per animal 3 times per week. <sup>2</sup>
	Horse flies (NHE-60)	pyrethrin 1% + synergist E.C.	10 gal.	1-2 qt. per animal every 3 days. <sup>2</sup>
		crotoxyphos 3.0% D. or 1.0% O. coumaphos 5.0% D. or 1.0% O. dichlorvos 0.25% O.	In dust bags or face and back oilers	Use only in exits of milk parlors or barns. Apply daily.
	Horn flies only			
Beef Cattle	Lice and mange (NHE-18)	lindane 20% E.C. lindane 12.4% E.C. malathion 50-57% E.C.	1½ pt. <sup>3</sup> 1 qt. <sup>3</sup> 3 qt.	1-2 gal. per animal. Spray entire animal to saturation. Make 2 applications 14 days apart.
	Face flies <sup>4</sup> (NHE-106)	crotoxyphos E.C., 1.1 lb. per gal.	2 qt. per 3 gal. water	1-2 oz. per animal; 2-4 times per week from automatic sprayer.
	Horn flies <sup>4</sup> (NHE-59)		7½ gal.	1-2 pt. per adult animal per week. <sup>2</sup>
	Stable flies <sup>5</sup> (NHE-61)	crotoxyphos 2.0% O.		1-2 oz. per animal; 2-4 times per week from automatic sprayer.
	Horn flies <sup>4</sup> (NHE-59) Stable flies <sup>5</sup> (NHE-61)	toxaphene 60% E.C.	5 pt.	1-2 qt. per animal every 3 weeks. Only partially controls stable flies. <sup>2</sup>
		toxaphene 5% O.		Saturate cloth, canvas, or burlap back oiler every 2 weeks. Only partially controls stable flies and face flies.
	Horse flies (NHE-60)	Use as directed for dairy cattle above.		
	Grubs	The following systemic insecticides, coumaphos, crufomate, and trichlorfon, as sprays provide excellent control of grubs and good control of lice. Use only on <i>native beef cattle</i> in herds having a history of grub problems. Treat only those animals between 4 months and 2½ years of age. Apply during August or September in the southern half of the state and in September or October in the northern half of the state.		
	Mange and lice	crotoxyphos E.C. 1.1 lb. per gal.	1 gal. + 7 pt.	2-4 qt. per animal. Spray entire animal to saturation. Make 2 applications 14 days apart.
		malathion 50-57% E.C.	3 qt.	
Sheep	Ticks, lice, and scab (NHE-53)	lindane 20% E.C.	1 qt. <sup>3</sup>	Spray entire animal to saturation.
		lindane 12.4% E.C.	3 pt. <sup>3</sup>	Use ½ strength in dipping vat for scab.
		toxaphene 60% E.C.	3 qt. <sup>3</sup>	Spray entire animal to saturation or use in dipping vat for scab.
	Nose bot	crufomate 21% E.C.		Administer 2 cc. per 10 lb. of body weight as a drench.

Note: E.C. = emulsion concentrate, O. = oil solution, W.P. = wettable powder, D. = dust.

<sup>1</sup> The same dosage of a water-base spray may be used.

<sup>2</sup> Spray head, back, sides, belly, and legs carefully. Start treatments in June.

<sup>3</sup> Add 2 pounds of detergent per 100 gallons of spray for better wetting effects.

<sup>4</sup> Place cattle in confinement to avoid attack by face flies and horn flies.

<sup>5</sup> Remove decaying straw, hay, and feed from barns and lots, and spread to dry so stable fly breeding will be reduced.

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## CHICKENS, LIVESTOCK BARN, AND SHEDS

(Refer to table of limitations on back page before using insecticides)

Insect	Insecticide	Amount per 100 gal. water or as directed	How to apply
<b>Chickens</b>	Common red mites, bed-bugs, and lice (NHE-54)	carbaryl 80% W.P. (not for lice)	4 oz. per 5 gal. water
		Rabon 50% W.P.	6.5 oz. per 5 gal. water
		coumaphos 25% W.P.	6 oz. per 5 gal. water
		malathion 50-57% E.C.	10 oz. per 5 gal. water
	Northern fowl mites and lice (NHE-54)	carbaryl 5% D.	Apply to litter, 1 lb. per 40 sq. ft., and 1 lb. per 100 male birds. <sup>1</sup>
		coumaphos 0.5% D.	Apply to litter and nests, 1 lb. per 20 sq. ft.; 1 lb. per 100 male birds. <sup>1</sup>
		malathion 4% D.	Apply to litter and nests, 1 lb. per 50 sq. ft.; 1 lb. per 100 male birds. <sup>1</sup>
	Northern fowl mites, common red mites, bed-bugs, and lice (NHE-54)	carbaryl 80% W.P.	4 oz. per 5 gal. water
		Rabon 50% W.P.	6.5 oz. per 5 gal. water
		coumaphos 25% W.P.	3 oz. per 5 gal. water
		malathion 50-57% E.C.	5 oz. per 5 gal. water
<b>Residual Sprays for Livestock Barns and Sheds<sup>4</sup></b>	House flies (NHE-16, 88) Stable flies (NHE-61) Other flies, mosquitoes, and gnats	fenthion 45% E.C.	3 gal.
		Start treatments in June and maintain good sanitation. Apply 2 gal. per 1,000 sq. ft. or to runoff to ceilings, walls, and support posts, and outside around doors and windows. Lasts about 4-6 weeks. <sup>2</sup>	
		diazinon 50% W.P.	16 lb.
		Lasts about 2-3 weeks. <sup>2</sup> Apply as for fenthion.	
		dimethoate 25% E.C.	4 gal.
		Lasts about 3-4 weeks. <sup>2</sup> Apply as for fenthion.	
<b>Space Sprays for Feed Lots and Sheds<sup>4</sup></b>	House flies (NHE-16, 88) Stable flies (NHE-61) Other flies, mosquitoes, and gnats	Rabon 50% W.P.	16 lb.
		Lasts about 2-4 weeks. <sup>2</sup> Apply as for fenthion.	
		Ravap { Rabon 21% E.C. dichlorvos 6% E.C.	4 gal.
		ronnel 24% E.C.	4 gal.
		Lasts about 1-2 weeks. <sup>2</sup> Apply as for fenthion.	
		Apply at 5 gal. per acre with mist blower over the top of animals and pens every 3 to 7 days.	
<b>Baits as Supplements for Livestock Barn and Shed Sprays<sup>4</sup></b>	House flies (NHE-16, 88)	dichlorvos 22% E.C.	4 oz. per 1 gal. corn sirup and 1/2 gal. warm water
		Apply to favorite fly-roosting areas from tank sprayer as needed to supplement residual spray treatment.	
		naled 37% E.C.	2 oz. per 1 gal. corn sirup and 1/2 gal. warm water
		Apply as for dichlorvos.	

Note: E.C. = emulsion concentrate, O. = oil solution, W.P. = wettable powder, D. = dust.

<sup>1</sup> The male birds will not require dusting for the control of lice.

<sup>2</sup> Lasting effects are shortened during periods of hot, dry weather.

<sup>3</sup> Temporary stinging of eyes may occur from mist but this is not hazardous.

<sup>4</sup> Good sanitation is the basic step in barn fly control. Remove manure, decaying straw, hay and feed, and spread to dry each week. Insecticides will not cover the sins of poor sanitation.

# LIMITATIONS FOR SUGGESTED INSECTICIDES APPLIED TO LIVESTOCK OR IN LIVESTOCK BARNs

(Blank spaces in the table denote that the material is not suggested for that specific use in Illinois)

	Dairy		Beef		Swine		Sheep		Chickens	
	Animals	Barns	Animals	Barns	Animals	Barns	Animals	Barns	Birds	Barns
carbaryl (Sevin).....	...	...	...	...	...	...	...	...	E, I	E, I
coumaphos (Coral).....	B, D	...	B, D, K	...	...	...	...	...	I	I
crotoxyphos (Ciodrin).....	B, D	...	B, D	...	B, D	...	...	...	...	...
crufomate (Ruelene).....	...	...	B, A, K, D	...	...	...	L, M	...	...	...
diazinon.....	...	H, D	...	H, D	...	H	...	H	...	H
dichlorvos (DDVP) (Vapona).....	B, D	C, J	...	C, J	...	C, J	...	C, J	...	C, N
dimethoate (Cygon).....	...	H, D	...	H, D	...	H	...	H	...	H
fenthion (Baytex).....	...	H, D	...	H, D	...	H	...	H	...	H
lindane.....	...	...	B, G, K	...	...	...	B, G	...	...	...
malathion.....	...	...	B, D	...	B	...	...	...	I	I
naled (Dibrom).....	...	C, N	...	C, J	...	C, J	...	C, J	...	C, N
pyrethrin.....	B	...	B	...	...	...	...	...	...	...
Rabon.....	...	H, D	...	H, D	...	H	...	H	I, O	I
Ravap.....	...	H, D	...	H, D	...	H	...	H	...	...
ronnel (Korlan).....	...	H, D	...	H, D	...	H	...	H	...	I
toxaphene.....	...	...	B, F, K	...	...	...	B, F	...	...	...
trichlorfon (Neguvon).....	...	...	B, D, L, K	...	...	...	...	...	...	...

- Do not apply within 28 days of slaughter. Do not apply repeat applications within 28 days.
- Do not contaminate feed, water, milk, or milking equipment.
- As a bait. Do not apply within reach of animals or in milk rooms. Do not contaminate feed, water, milk, or milking equipment.
- Do not apply in conjunction with the feeding of phenothiazine or organophosphate insecticides.
- Do not apply within 7 days of slaughter and do not treat nesting material. Do not repeat within 4 weeks.
- Do not apply within 28 days of slaughter.
- Do not spray within 30 days of slaughter. Do not dip within 60 days of slaughter.
- When used as a spray, remove animals before treating barn and cover feed and watering troughs. Do not use in milk rooms. Do not apply to animals.
- Gather eggs before treatment and do not contaminate feed and water.
- As a space spray; may be applied with animals present, but avoid direct application to exposed feed and water. Do not apply in conjunction with the feeding of phenothiazine or the feeding or use as animal or shelter treatments of organophosphate or carbamate insecticides.
- Do not treat cattle less than 4 months old or pigs before weaning. Do not treat sick or stressed animals.
- Do not apply within 14 days of slaughter.
- Do not drench sick, weak, or overheated animals; lambs under 30 pounds; animals being fed in confinement; or pregnant animals within one month of lambing.
- As a space spray; do not apply when dairy cattle or poultry are in building and avoid direct application to exposed feed and water.
- Do not repeat more often than every 14 days. Do not apply to birds if used on walls for fly control.

## FOR YOUR PROTECTION

Here are a few easy rules that if followed will prevent most insecticide accidents:

- Wear rubber gloves when handling insecticide concentrates.
- Do not smoke while handling or using insecticides.
- Keep your face turned to one side when opening insecticide containers.
- Leave unused insecticides in their original containers with the labels on them.
- Store insecticides out of reach of children, irresponsible persons, or animals; store preferably in a locked cabinet or room.
- Wash out and bury or burn empty insecticide containers.
- Do not put the water-supply hose directly into the spray tank.

8. Do not blow out clogged nozzles or spray lines with your mouth.

9. Wash with soap and water exposed parts of body and clothes contaminated with insecticide.

10. Do not leave puddles of spray on impervious surfaces.

11. Do not apply to fish-bearing or other water supplies. Do not allow treated animals in fish-bearing waters or other water supplies until the spray has dried.

12. Do not apply insecticides, except in an emergency, to areas with abundant wildlife or to blossoming crops visited by bees. Avoid drift onto blossoming crops and onto beehives.

13. Do not apply insecticides near dug wells or cisterns.

14. Do not spray when weather conditions favor drift.

15. Observe all precautions listed on the label.



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